Support for Amendment

In this Amendment, claims 1 and 4 are amended. Additionally, claims 3, 5 and 7-8 are cancelled.

Claim 1 has been amended to incorporate the subject matter of original claims 3, 7 and 8.

Claim 4 has been amended to be dependent from claim 1.

No new matter has been added by this Amendment. Entry of the Amendment is requested. Upon entry, claims 1, 2, 4 and 6 are pending in the application.

REMARKS

This is in response to the final action Office Action mailed February 20, 2009. The Office Action includes two prior art based rejections of the claims, each of which will be discussed in turn.

35 U.S.C. §102(b) rejection over US Publication 2005/0046858 to Hanson et al.:

In the Office Action, claims 1, 2 and 4-6 are rejected as being anticipated under 35 U.S.C. §102(b) by Hanson et al. This rejection is traversed.

Claim 1 specifies a method of determining a refractive index of an object compared to a refractive index of a surrounding medium wherein the object comprises particles of a first substance having a first refractive index and a second substance having a second refractive index and a medium having a refractive index between said first and second refractive index. Claim 1 specifies the step of counting the number of particles having a first refractive index and counting the number of particles having a second refractive index in a specific area of said object and the step of separating particles in a particle blend and counting particles in a particle blend and/or calculating the volume ratio between particles in a particle blend.

Hanson et al. disclose systems and methods for spatial-heterodyne interferometry for reflection and transmission measurements. A method includes digitally recording a first spatially-heterodyned hologram using a first reference beam and a first object beam; digitally recording a second spatially-heterodyned hologram using a second reference beam and a second object beam; Fourier analyzing the digitally recorded first spatially-heterodyned hologram to define a first analyzed image; Fourier analyzing the digitally recorded second spatially-heterodyned hologram to define a second analyzed image; digitally filtering the first analyzed image to define a first result; and digitally filtering the second analyzed image to define a second result; performing a first inverse Fourier transform on the first result, and performing a second inverse Fourier transform on the second result. The first object beam is transmitted through an object that is at least partially translucent, and the second object beam is reflected from the object. See Hanson et al. at Abstract.

Claim 1 is not anticipated by Hanson et al. because Hanson et al. does not disclose each limitation of claim 1. Specifically, and as conceded in the Office Action at page 7, Hanson et al.

fails to disclose a method including the step of counting the number of particles having a first refractive index and counting the number of particles having a second refractive index in a specific area of the sample, as specified in claim 1. As such, Hanson et al. does not anticipate claim 1. Further, there is no suggestion in Hanson et al. for a person having ordinary skill in the art to modify the teachings of Hanson et al. to include counting particles having different refractive indices or to include the separation of such particles in a particle blend and/or calculation of the volume ratio between the different particles in such a particle blend, as specified in claim 1. Therefore, claim 1 is both novel and unobvious over Hanson et al. Withdrawal of the rejection is requested.

35 U.S.C. §103(a) rejection to claims 3, 7 and 8 over Hanson et al. and US Patent 5,793,485 to Gourley:

In the Office Action, claims 3, 7 and 8 are rejected under 35 U.S.C. §103(a) as being obvious over Hanson et al. and Gourley. This rejection is traversed.

As stated above, Hanson et al. do not disclose a method including the step of counting the number of particles having a first refractive index and counting the number of particles having a second refractive index in a specific area of the sample, as specified in claim 1. Further, and as related previously, Hanson et al. provides no suggestion to one having ordinary skill in the art to modify Hanson et al. to meet the limitations of claim 1. Therefore, claim 1 is patentable over Hanson et al.

With respect to Gourley, a resonant-cavity apparatus for cytometry or particle analysis is disclosed that comprises a resonant optical cavity having an analysis region with an analysis means. The analysis means includes a spectrometer and/or pulse-height analyzer within the apparatus for recovering information from a light beam to determine a size, shape, identification or other characteristics about the cells or particles being analyzed. See Gourley at Abstract.

Claim 1 is not rendered obvious by Hanson et al. and Gourley at least because a person having ordinary skill in the art would not have considered Gourley in arriving at the claimed invention. Specifically, the teachings of Gourley apply to a different technological area as compared to Hanson et al. and claim 1, both of which relate to digital holography. In contrast, Gourley relates to an apparatus comprising a resonant optical cavity comprising a pair of

adjacent mirrors oriented parallel to each other, and further including a semiconductor optical gain medium located between the mirrors and an analysis region located between the mirrors for containing at least one cell or particle to be analyzed; and pump means for activating the gain medium to generate spontaneous emission within the resonant optical cavity. See Gourley at Abstract; at column 3, lines 5-13; and at Figures 1 and 14. Clearly, Gourley is not related to digital holography and it would therefore not have been obvious for a person skilled in the art to have attempted to combine the teachings of Hanson et al. and Gourley. As such, claim 1 is patentable over Gourley and Hanson et al.

Moreover, if a person skilled in the art, against expectations, would have attempted to combine the teachings of Hanson et al. and Gourley, the combined teachings would not have resulted in the claimed invention. According to the present invention, the unwrapped and background corrected phase images depict the contrast which gives the volume of different particles having different refractive indices. See page 7, lines 6-19 of the Application. In such a way the number or amount of the different particles having different refractive indices may be obtained according to the present invention. *Id.* Therefore, the refractive indices are a direct input for calculating the number of different particles according to the present invention. This is different in comparison to the present invention, which is directed to digital holography. Gourley discloses the use of a pulse-height analyzer 78. See Gourley from column 23, line 61 to column 24, line 3. By counting the pulses it is possible to count the number of cells or particles passing by the optical cavity. See Gourley at column 25, lines 9-14. Therefore, Gourney is not related to the use of different refractive indices of different particle types as a direct input of the number of different particles, as required by claim 1. Moreover, Gourney is not related to thereafter separating and counting those different particles in a particle blend as according to the present invention, especially not by means of a method relating to digital holography, as specified in claim 1. As such, Gourney and Hanson et al. provide no teaching or suggestion that would lead one skilled in the art to arrive at the claimed invention.

In view of what is disclosed above, claim 1 as well as the dependent claims 2, 4 and 6 of the present application are novel and inventive in relation to Gourney and Hanson et al. and the unlikely combination of Gourney and Hanson et al. In view of the above amendments and remarks, Applicant respectfully requests a Notice of Allowance.

Additionally, the Commissioner is hereby authorized to charge any additional fees as set forth in §§ 38 CFR 1.16 to 1.18 which may be required for entry of these papers or to credit any overpayment to Deposit Account No. 13-2725.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

Dated: August 20, 2009

By _____
Dennis R. Daley
Reg. No. 34,994

DRD/TPJ